Synopsis of the Thesis entitled

"Study of Interaction between Groundwater and Surface Water Resources with the help of existing biological indicators from Tal. Palam, Dist. Parbhani"

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Submitted by

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"Study of Interaction between Groundwater and Surface Water Resources with the help of existing biological indicators from Tal. Palam, Dist. Parbhani"

Abstract

Access to water is recognized as a key limiting factor for socio economic development of any Country. A surface water becoming scarce due to the climate change uneven topography unusual drying up of rivers and streams, on which most of the population rely for their water needs. The Study area comprises Palam Taluka, Dist. Parbhani which comes under Marathwada region of Maharashtra state, which is one of the drought prone area. There are many of the reasons behind the waters scarcity in the Marathawada region

Uneven. Un usual topography. Lack of diversified project of the water conservation Lack of optimum and tactical Knowledge required for the water conservation. Inadequate knowledge of biological indicators of underground water springs. Application of unsuitable methods of watershed management. Absence of adequate knowledge required for water recharge. The proposed study deals to acquire proper knowledge of the interaction between underground drainage & surface drainage with respect to the existing biological indicators available in the study area. To suggest the remedial measures to restore ground water level and reduce the water scarcity of the study area.

Review of literature -

1. **Oscar Edward meinzer**
   Published by-
   United states government printing office-
   Washington-1927
   Plants as indicators of ground water.
   plants that habitually feed on ground water-
   perhaps the most outstanding feature of the flora of the desert is its relation or lack relation to the water table on the one hand are the plants which are adapted to extreme economy of water, which depends on the rains that occurs at long intervals for their scanty water supplies. And which during prolonged periods of drought maintain themselves, in a nearly dormant condition these plant as known as xerophytes these plants have been called phreatophytes, such a plants is literally a natural well with pumping equipment, lifting water from the zone of saturation.

2. **Jamilu Bala Ahmed Il[12], Biswajeet, Pradhan[34], Shattri Mansor[1], Zainuddin M. Yusoff and Salamtu Abraham EKPO, 07 May 2019.**
   In some part of tropical Africa, termite mound locations are traditionally used to site ground water structures mainly in the form of hand dug wells with high success rates. In this paper, locations and structural features of termite mounds were mapped with

the aim of determined the aquifer potential beneath termite mounds and comparing the same adjacent areas, 10 m away.

The physical and hydraulic measurements demonstrated relatively higher infiltration rates and lower soil water content on mound soils compared with compared the surrounding areas.

3. Rinku Verma – at.al. November-2015

   Tree-species as Indicators of ground water recharge and discharge In times of water crisis preservation of water resource are must plant species becomes dormant after ground water is beyond their reach. Certain species in arid regions are observed to depth of water table showing that species are confined almost completely to areas with specific depth limits. One of the most reliable indicators of the existence of water well is aars is the Acacia horrid (sweet thorn)

4. Frank Dziock at.al, 91, 2006/4/271-291 Biological Indicators system in flood plains. The influence of organic pollution on aquatic organisms is so obvious that these observation have made quite a significant contribution to the development of the idea of bio indication. Indicators for complex ecosystem such as flood plains, which are determined by parameters and processes that are difficult to measure directly (E.g. frequency of inundation) are of special importance. The object of this article is to review already established indicators system in the context of different bio indication concept.

• Objectives of Research.

1. To study the ground water status of study area.
2. To study the various biological indicators available in the study area
3. To study the interaction between groundwater & surface water resources.
4. To study the applicable of benefits of the bio indicators to explore the availability of ground water.
5. To make use of the study for the recharge of ground water table

• Research Methodology

In the proposed study, the sites will be selected where surface drainage follows a particular pattern. Data will be collected to study the available bio indicators & the relation between underground water and surface water. The soil profile of the selected sites will be studied with the help of resistivity meter & data will collected. The Data will be analyzed processed to make a Digital Elevation map of selected sites of the study area, so that we will be able to know the underground drainage & surface drainage with the help of biological indicators.

- **Significance of the study**

The proposed study will be helpful to get proper knowledge of the topography, the water drainage system, the relation between the drainage system, & bio indicators. The proposed study will be helpful to increase the ground water level & mitigate the water scarcity of drought prone study area.

Year-wise Plan of work and targets to be achieved:

First Year: First Six Months

1. Finalizing study area by conducting a primary survey.

2. Literature study for broaden research base

Second Six months

1. Analysis of samples & primary data collection.

2. Literature review.

3. Analysis of primary data & interpretation.

Second Year: First Six months

1. Analysis of samples & data collection.

2. Literature review.

3. Preparation & publication of research paper.

Second Six months

1. Analysis of samples & data collection.

2. Literature review.

3. Analysis & data interpretation.

Third Year: First Six months

1. Analysis of primary data generation.

2. Discussion on the statistical analysis of the research & conclusion.

3. Preparation & publication of research paper.

Second Six months

1. Finalizing the result drawn & conclusion. 2. Ph.D. Thesis writing

References

1) Jamilu Bala Ahmed II12, Biswajeet, Pradhan34, Shattri Mansor1, Zainuddin M. Yusoff and

Salamtu Abraham EKPO Published 7 May 2019.

Acquifer Potential Assessment in Termites Manifested Locales Using Geo-Electrical and Surface Hydraulic Measurement Parameters.

2) Oscar Edward meinzer

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Plant as indicators of ground water

3) Rinku Verma, Jayanti T, Vinoda, Shivappa, A.N.S. Gowda

International Journal of Engineering and Technical Research (IJETR), 11 November 2015.

Tree species as indicators of ground water recharge and discharge

4) Frank Dziock at.al. 91/2006/4/271-291

Biological Indicators system in flood plains.

5) Dalchand Jhariya - January 2018

Ground water Indicators

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